DRAFT MEMORANDUM, FOR COMMENT, Revision 5, March 30, 2011

To: The Board of Managers, Chevy Chase Village
From: Porter Wheeler, Chair, Traffic Committee
Date: March 30, 2011
Subject: Progress Report on STOP Signs and other Traffic Controls
Copies to: Shana Davis-Cook, Village Manager
Members of the Traffic Committee

EXECUTIVE SUMMARY

The recently revived Traffic Committee, at the request of the Board of Managers, has considered various processes and policies regarding the installation of STOP signs and other traffic control devices. This memorandum discusses those policy elements and outlines an array of best practices from other jurisdictions. General recommendations are proposed for desirable characteristics of Village processes and policies. The Committee invites feedback from the Board about this working draft setting forth the framework of a policy process and evaluation criteria to apply toward petitions for installation of STOP signs and other traffic control devices. The Committee also inquires whether the Board wants specific recommendations on the petitions referred to the Committee.

Introduction

The Traffic Committee (TC) was revived as a standing committee in November 2010 to serve as an advisory body to assist the Board of Managers (Board) in matters related to traffic and parking. Currently, the TC has 12 members representing a geographical cross section of Village residents. An organizational meeting was held on January 12, 2011 and a second meeting was held on February 1, 2011. A Scope for TC activities was developed and submitted to the Board at their regular meeting on February 14, 2011. As indicated in the Scope, the TC expects to meet as needed during the year to address pressing issues, generally as referred by the Board. The TC also met on March 3 and March 29 to develop a policy for STOP sign petitions.

Background

The Board is facing acceleration in the number of requests from Village residents for a variety of controls over traffic, parking, pedestrian safety and other related matters. In part, these requests relate to the overall traffic growth and congestion in Montgomery County and the District of Columbia, and in part to specific land-use developments, individual perceptions, changes in property ownership, temporary or occasional street construction, emergencies creating congestion elsewhere that lead vehicles to choose to use certain Village streets, etc.

The Board of Managers has referred to the TC two requests for the installation of new STOP signs in the Village, addressing two intersections, (1) that of Newlands where it branches into the semicircle, and (2) that of Nevada with East Melrose. The TC held a question and answer session with the petitioners of both and had a lively discussion on the STOP sign requests on February 1, 2011, but deferred a recommendation pending development of processes and policies to deal with these matters.

Considerations Regarding Use of STOP Signs

The purpose of a STOP (or YIELD) sign is to establish intersection control and assign priority rights of way for approaching vehicles, with the goal of enhancing public safety and improving traffic operation at an intersection where the normal right-of-way rules are judged insufficient. *The normal right-of-way rule is to yield to any vehicle in the intersection or approaching from your right.* Multiway (usually four-way) STOP signs are used when the number and angle of approaches and/or visibility hampers the ability to see conflicting traffic on one or more approaches. Most simply, STOP signs are placed to prevent crashes where there might be a question about who should have the right-of-way. STOP signs are also used to enhance pedestrian safety.

With regard to STOP signs, it should be noted that STOP signs offer both benefits and disadvantages and that STOP sign use has been declining in many countries, being replaced by yield or "give way" signs or more recently roundabouts. Although STOP (and yield) signs may improve safety in many applications, according to the traffic literature STOP signs are not always effective in controlling speed. Indeed, motorists often speed up to make up any lost time. There is evidence that STOP signs impose higher vehicle costs, more fuel consumption, increased emissions, added noise, and increased travel time, and these added overall costs to the traveling public can be substantial. Studies have even questioned whether STOP signs offer measurable safety benefits (especially versus YIELD signs). In fact, safety may be diminished if drivers encounter little crossing traffic and come to consider the STOP sign as an annoyance, and/or if pedestrians become overly reliant on vehicles stopping and cross incautiously. Many areas are adopting traffic calming measures instead of traffic controls, recognizing that the most effective way to slow down traffic on residential streets is to design or re-design them for slower speeds.

Examples from Other Cities

Several useful examples were identified by TC members, a few of which are mentioned. The City of El Paso, TX, has published an information brochure on STOP signs (see brochure attached and www.elpasotexas.gov), as has the City of San Jose, CA (www.sanjoseca.gov). These brochures outline basic features of STOP signs and explain each City's process for handling requests.

The City of Belmont, CA, has developed guidelines for installation of stop signs that weigh the pros and cons of specific requests and caution against inappropriate installations. As stated by the City of Belmont, CA, in their Guidelines for Stop Signs:

> The approval of stop sign installations is an easy way out for a City Council because of the relatively minor cost involved and because there may be frustration at not being able to "do something" for the citizen. The end result is transferring an alleged traffic problem to being an enforcement problem. (www.belmont.gov)

Belmont City Council adopted a formal resolution establishing their guidelines (see Belmont resolution attached).

Jefferson County, CO (Golden), has also developed guidelines and a detailed list of "stop sign placement criteria" that received favorable comments from TC members in our discussions (Jefferson County criteria attached; also www.co.jefferson.co.us).
The TC considered several of these examples and incorporated many of their features into the recommendations that follow.

DRAFT RECOMMENDATIONS

General Characteristics of Recommended Process

The Board should develop a consistent process and a set of criteria within which to objectively evaluate these recurrent requests for traffic control devices such as new or additional STOP signs. The TC recommends that such a process incorporate the following components:

- A process that makes safety and security primary considerations alongside mobility considerations.
- A process that is receptive to the concerns and requests of all Village residents.
- A process that respects the opinions of affected residents on a given block or street segment proximate to the intersection.
- A process that encourages development of experience and expertise within the TC and seeks comment and recommendations from the TC whenever practical prior to Board action on such requests.
- A process that recognizes the unique character of many streets and intersections within the Village and seeks to protect the overall ambience of Village life.
- A process that recognizes the jurisdictional and regulatory impacts and interactions with surrounding State and County road networks.

General Policy Considerations for STOP Signs and Other Traffic Controls

Consideration of requests for STOP signs and other traffic controls should be guided by the following general policy characteristics:

- A policy that relies on credible, objective information.
- A policy that is consistent to the extent reasonable with the policy on speed humps (another traffic calming device) adopted by the Board at their January 2011 meeting. The speed hump policy set forth includes the following:
  - A written request to the Village Manager;
  - A staff review of the matter;
  - A notice and survey of owners/residents proximate to the location,
  - A quantitative hurdle expressed as a percent of proximate households approving (75% in support);
  - A quantitative hurdle for traffic volume along the street segment (at least 300 vehicles per day);
  - Recorded speeds exceeding posted limit by more than 5 mph; and
  - Recognition of the cost imposed on the Village budget to respond to such requests (fees on applicants were initially considered as well).

- An evaluation framework that considers a variety of criteria regarding the installation (or removal) of traffic control devices, such as the Criteria Guidance for right-of-way at intersections recommended in the Manual for Uniform Traffic Control Devices (MUTCD, 2009 Edition; see excerpts appended). The TC's deliberations recognized however that the MUTCD criteria may not accurately reflect the unusual conditions experienced on local streets within our community.

Specific Recommendations for Process and Policy on Intersection Controls

The TC has created and recommends for Board approval a process and policy for addressing intersection control that incorporates the concepts and steps identified above. The recommended approach follows closely the recently adopted Village Speed Hump Policy, including a written request and support by affected residents. The approach also considers the primary criteria set forth in the MUTCD including traffic volumes, vehicle speeds, and crashes, balanced by other factors. The TC is developing a numerical scoring system to assist in its evaluation of specific proposals. The TC expects to utilize this guiding framework to review proposals brought forward to it and advise the Board accordingly.

Proposed Process Framework:

- Petitioner should submit a written request to the Village Manager;
- A staff review of the matter, including application of the proposed numerical scoring system, consideration of alternate traffic calming measures, and, if warranted, traffic and engineering studies;
- A notice and survey of owners/residents proximate to the location;
- A referral of the matter to the Traffic Committee for consideration, incorporating results of any staff review or scoring system;
- TC may request presentations or traffic counts when desired;
- TC evaluates petition based on a range of quantitative and qualitative criteria;
- TC presents its findings and recommendation to Board of Managers;
- Board of Managers holds hearing if desired, deliberates, decides.

Proposed Considerations/Criteria for Evaluation of Petitions:

The TC's deliberations will develop a recommendation on a specific petition based on a weighting of positive and negative impacts at the specific location considering the range of factors below inclusive of the results of the numerical scoring system.

- A quantitative hurdle expressed as a percent of proximate households approving (recommending at least 75% in support);
- Traffic volumes, including turning movements, and the presence/number of pedestrians and bicyclists;
- A quantitative hurdle for traffic and pedestrian volume along the street segment (recommending at least 300 vehicles per day);
- Recorded speeds in excess of posted speed limit (by at least 5 mph);
- Reported crash or injury experience (recommending at least one incident);

- Layout of the intersection, including number and angle of approaches and sight distance/obstructions on each approach;
- Amount of cut-through traffic;
- Location of public facilities including schools, parks, churches, recreational clubs;
- Unexpected and unusual street conditions and traffic hazards and their proximity to the intersection;
- Overall safety of our Village streets;
- Alternate means of addressing safety concerns underlying the stop sign request; and
- Recognition of the cost imposed on the Village budget to respond to and follow-up on such requests.

Appendix 1

Selected Excerpts from Section 2B.04 for the MUTCD:

State or local laws written in accordance with the "Uniform Vehicle Code" establish the right-of-way rule at intersections having no regulatory traffic control signs such that the driver of a vehicle approaching an intersection must yield the right-of-way to any vehicle or pedestrian already in the intersection. When two vehicles approach an intersection from different streets or highways at approximately the same time, the right-of-way rule requires the driver of the vehicle on the left to yield the right-of-way to the vehicle on the right.

Engineering judgment should be used to establish intersection control, considering the following factors:

A. Vehicular, bicycle, and pedestrian traffic volumes on all approaches, especially if through street volumes exceed 6,000 vehicles per day;
B. Number and angle of approaches;
C. Approach speeds;
D. Sight distance available on each approach; and
E. Reported crash experience, usually three or more crashes within a 12-month period.

In addition, the use of YIELD or STOP signs should be considered at the intersection of two minor streets or local roads where the intersection has more than three approaches and where one or more of the following conditions exist:

A. The combined vehicular, bicycle, and pedestrian volume entering the intersection from all approaches averages more than 2,000 units per day;
B. The ability to see conflicting traffic on an approach is not sufficient to allow a road user to stop or yield in compliance with the normal right-of-way rule if such stopping or yielding sis necessary; and/or
C. Crash records indicate that five or more crashes that involve the failure to yield the right-of-way at the intersection (under the normal rule) have been reported within a 3-year period, or that three of more such crashes have been reported within a 2-year period.

In most cases, the roadway carrying the lowest volume of traffic should be controlled.
YIELD or STOP signs should not be used for speed control.
A YIELD or STOP sign should not be installed on the higher volume roadway unless justified by an engineering study.

Section 2B.06 states: At intersections where a full stop is not necessary at all times, consideration should first be given to using less restrictive measures such as YIELD signs.

Section 2B.07 sets forth other similar criteria for multi-way STOP applications, including several factors that may be considered such as:
D. An intersection of two residential neighborhood collector (through) street of similar design and operation characteristics where multi-way stop control would improve traffic operation characteristics of the intersection.

Other Attachments
Appendix 2 (electronic): City of El Paso, Texas, Information Brochure, "Stop Signs"
Appendix 3 (electronic with 2): City of Belmont, CA, Resolution of the City Council Establishing the Guidelines for the Installation of All-Way Stops.
Appendix 4 (electronic): Stop Sign Placement Criteria, Jefferson County, CO.

Procedures and guidelines for the installation of all STOP signs

All Stop signs must comply with the Texas Manual on Uniform Traffic Control Devices (TMUTCD), which itself must also conform to national standards. Using the guidelines found in this manual, an investigation is conducted which determines whether the placement of a STOP sign is justified. The following are some of the steps taken to ensure STOP signs are installed correctly.

1. First a history of the intersection in question is reviewed. This includes reviewing prior investigations and accident data to determine if a STOP sign is justified.

2. A field investigation is also performed to check the visibility, street layout, and general surroundings of the site.

3. If it is necessary, a count of all vehicles, pedestrians, and bicyclists is conducted for the intersection of concern on an average day. The results of the count are then reviewed and compared to the minimum requirements allowed by the TMUTCD for multiway STOP signs.

4. Once it has been determine that the installation of a STOP sign is justified and the City Engineer approves, the Street Department is instructed to install the sign.

Engineering Department,
Traffic Division
2 Civic Center Plaza – 6th Floor
El Paso, Texas 79901-1196
(915) 541 - 4050

City of El Paso

ENGINEERING
DEPARTMENT
TRAFFIC DIVISION

Information Brochure

Stop Signs

January 2005

City of El Paso Texas

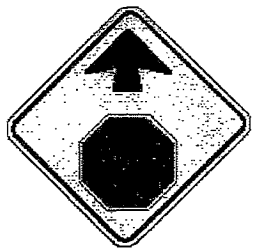
Stop Signs

STOP Signs and other traffic signs on City roadways are handled through the Engineering Department, Traffic Division at 541-4050.

STOP signs in particular, are signs who's function are often misunderstood by the public. This brochure provides a brief summary on some of the standards and procedures pertaining to STOP signs that will hopefully clarify any misunderstandings.

What is a STOP sign's function and what other signs are used with STOP signs?

A STOP sign is a sign used to direct motorist to stop at the spot where a STOP sign is located. The purpose of a STOP sign is to provide safe and orderly operation of an intersection that is otherwise not possible without the use of one or more STOP signs. It is octagon in shape with white lettering and a red background. These signs are found on the right side of the roadway and sometimes on medians to increase visibility. When more than two directions are controlled by STOP signs, then a supplemental plaque, such as a 4-WAY plaque or an ALL WAY plaque are used to inform motorists of the type of traffic control that exist at that intersection. Also, if a STOP sign is in its correct location and it cannot be seen very well because of hills or curves, a Stop Ahead sign is installed in advance of the STOP sign.



Will more stop signs slow traffic on our streets?

Each year, the City receives many requests for STOP signs as a way to reduce speeding. However, research shows that when STOP signs are used incorrectly, such as for the sole purpose of reducing speeding, the number of intentional violations rises. Studies show that the speed of vehicles in the immediate area of the STOP sign is reduced, but the speed between intersections increases as a result of motorists making up for lost time. In time these STOP signs become an annoyance to motorists causing motorists to disregard them, and usually develop disrespect for all traffic signs. Also, research shows that other measures, such as police involvement and traffic calming for residential streets have proven to be more effective in reducing speeding than STOP signs.

Most drivers are reasonable, but when they are confronted with what they think are unreasonable and unnecessary restrictions, they are more likely to ignore them. This is why STOP signs are installed at intersections only after a careful engineering investigation and study has been performed and the results prove that a STOP sign is required and justified.

Is having a STOP sign always better than no STOP sign?

STOP signs that are not needed can create more problems than they solve. STOP signs create a false sense of security that reduces a person's awareness. This becomes a problem when motorists decide not to stop because they believe a particular STOP sign to be pointless and at the same time pedestrians unwittingly cross into on coming traffic because they believe that a STOP sign makes it safe to cross the street. This is why it is usually better to allow drivers to enter an intersection cautiously without the perceived security of a STOP sign, than to install a STOP sign incorrectly as a cure-all problem solver.

Are four-way STOPs better than two-way STOPs?

Four-way stops, in most cases are only useful when traffic volumes are high and approximately equal on all four approaches. Otherwise, the street carrying the lowest volume of traffic is usually stopped.

How can I get a STOP sign installed?

A phone call or written request is all that is needed to get STOP sign information. Please contact the Traffic Division at 541-4050 or write to:

Engineering Dept., Traffic Division
City of El Paso
Two Civic Center Plaza
El Paso, TX 79901-1196
Phone # (915) 541-4050

When you call or write, please identify the name of the intersection or street location of concern and any additional information you feel is appropriate. After the request has been received, an engineering study and a field investigation are performed to determine if a STOP sign is indeed needed. Your daytime telephone number is also needed so that the Traffic Engineering staff can contact you with the outcome of the evaluation.

What are some of the conditions that justify the use of a STOP sign?

1. At an intersection where a less important road intersects a main road and the normal right-of-way rule would not provide reasonably safe operation.
2. At a street entering a highway or major through street.
3. At an unsignalized intersection in a signalized area.
4. Where inadequate gaps in traffic, restricted view, or crash records indicate a need for a STOP sign.

What should I do if I see a STOP sign obstructed by an object?

If a STOP sign is not visible to the driver, then it cannot perform its function and an unsafe situation arises. Please report all obstructions or other perceived safety hazards immediately to the Traffic Division at 541-4050 or Street Department at 621-6861.

A RESOLUTION OF THE CITY COUNCIL ESTABLISHING THE GUIDELINES FOR THE INSTALLATION OF ALL-WAY STOPS.

Whereas, the primary purpose of an all-way stop is to assign right-of-way at an intersection, and,

Whereas, stops signs are not to be used for the purposes of traffic calming, and,

Whereas, properly installed stop signs facilitate traffic movement and promote traffic safety.

NOW, THEREFORE, BE IT RESOLVED....that the guidelines for the installation of all-way stops signs shall be as follows:

All-way stop sign installation may be considered if ANY of the following conditions exist:

1. Traffic and Pedestrian Volumes
   (a) A minimum hourly average (for any eight hours) volume of 300 vehicles entering the intersection from all approaches on an average day. In addition, the vehicular volume entering the intersection from the minor street or streets fro the same eith hours must average 1/3 of the total volume enterning the intersection (100 per hour minimum), or,
   (b) A minimum hourly average (for any eight hours) volume of 300 vehicles entering the intersection on the main approach and a pedestrian volume of at least 100 pedestrians per hour crossing the main street during the same eight hours.

2. Accidents

   3 or more types susceptible to correction by stop signs within a 12-month period, with satisfactory observance and enforcement of less restrictive control.

3. Visibility

   The straight line sight distance o one or more approaches of the major street for vehicles or pedestrian crossing the intersection is less than 150 feet.

4. Residential Area
   Volume warrants to be reduced to 60% of the values above if ALL of the following conditions are met:
   a. Both streets have residential frontage with existing 25 mph speed limits
   b. Neither street is an adopted through street
   c. Both streets are two-lane streets
   d. No existing stop sign or signal is located on the more heavily traveled street within a distance of 600 feet.
   e. Intersection with streets extending 600 feet or more away from the intersection on at least three sides.
   f. Installation of a multi-way stop is compatible with overall traffic circulation needs for the residential area.

5. Unusual Conditions

Volume warrants to be reduced to 60% of the values above if any unusual condition such as steep hill or curves.

Stop Sign Placement Criteria (Jefferson County, Colorado)

The purpose of a multi-way stop is to provide safe and adequate gaps for vehicles to enter an intersection. The County does not use stop signs for speed control. National data concludes that the installation of unwarranted stop signs (or posting artificially low speed limits) does not reduce excessive speeding. In fact, stop signs often provide a false sense of security for pedestrians and motorists, which increase the potential for accidents.

When considering requests for stop sign installation, the County evaluates street conditions such as street dips or bumps, locations with obscured vision, and routes children walk to school.

Non-Residential Stop Sign Criteria

The County follows Federal Highway Administration (FHWA) standards for the placement of stop signs on non-residential streets. According to these standards, intersections must meet one or more of the following conditions:

1. Intersection of a less important road with a main road where application of the normal right-of-way rule would not be expected to provide reasonably safe operation.
2. Street entering a through highway or street.
3. Unsignalized intersection in a signalized area.
4. High speeds, restricted view, or crash records indicate a need for control by the stop sign.

Residential Stop Sign Criteria

The County evaluates requests for all-way stop signs on a residential street using the following criteria:

1. pedestrians and bicyclists,
2. established School Safe Walk Routes,
3. speed of traffic on all approaches,
4. the amount of cut-through traffic,
5. traffic crash experience and types of crashes,
6. sight obstructions and sight distance adequacy for all quadrants,
7. unexpected and unusual traffic hazards and their proximity to the intersection,
8. conflict analysis,
9. location of public facilities including parks, neighborhood recreation clubs, churches, and shopping centers,
10. conditions of the intersection, approaching streets, widths, shoulders, street lighting, and parking,
11. traffic volumes including approach volumes by turning movement and

presence of pedestrians, and
12.functional classification and designation as a collector or arterial street.
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